

HYBRID ELECTRONIC/OPTICAL SWITCH SYSTEM

ABSTRACT OF THE DISCLOSURE

A high speed optical communication and data transfer network comprises fiber optic links interconnecting a plurality of hybrid electronic-optical switch devices, each
5 hybrid switch circuit including an electronic switch, electronic switch controller and optical switch. The hybrid switch circuits and nodes on the periphery of the core network communicate amongst each other over a first dedicated wavelength. Optical signals on the first dedicated wavelength are converted to electronic signals which are monitored by the electronic controller in each hybrid switch circuit. Routing in the
10 network is optimized by transmitting lower volume data traffic on the first dedicated wavelength which is typically slower due to optical/electronic signal conversions and which uses more resources. Higher capacity data transfers are achieved by transmitting data on an assigned carrier wavelength over an established flow path among the optical switches of multiple hybrid switch circuits. Based on high and low
15 volume data traffic, the method and apparatus discussed herein advantageously supports direct and indirect optical data transmissions with as few overall intermediate optical-to-electrical or electrical-to-optical conversions as possible.